

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims:

1. (currently amended) A message-based method for managing a storage area network (SAN), comprising:

receiving an alert related to a state of a device coupled to the SAN;

parsing the alert to identify the state of the device, comprising:

determining a problem category, and

determining action options, comprising consulting an action rules database;

identifying an action required to correct a problem associated with the alert in response to the identified state of the device; ~~and~~

identifying a notification message, wherein the notification message provides information related to the state of the device; and

performing one of (1) automatically performing the action to correct the problem without approval from an operator of the SAN and (2) notifying the operator to perform the action to correct the problem.

2. (currently amended) The method of claim 1, further comprising identifying the ~~an~~ operator of the SAN to receive the notification message.

3. (original) The method of claim 2, further comprising sending the notification message to the operator.

4. (original) The method of claim 3, further comprising:

waiting on a response message from the operator, wherein the response message directs performance of one or more action steps; and

directing execution of the action steps.

5. (original) The method of claim 4, wherein the information in the notification message includes one or more suggested action steps for execution.

6. (currently amended) The method of claim 1, further comprising providing the operator with specific actions required to correct the problem~~directing performance of one or more automatic action steps.~~

7. (original) The method of claim 1, wherein the information includes a report of automatic action steps completed.

8. (original) The method of claim 1, wherein the notification message is one of an e-mail message, a voice message and a voice-to-text message.

9. (currently amended) A method for managing a storage area network (SAN), wherein a message processor receives alerts from a management server and sends notification messages to SAN operators, the method, comprising:

- monitoring states of devices coupled to the SAN;
- receiving an alert when a state of a device indicates a problem;
- determining if the alert is understood, wherein if the alert is not understood, the message processor sends a return message to the management server;
- identifying a device subject to the alert;
- identifying a problem as indicated by the alert;
- identifying action steps ~~for correcting~~ responding to the problem;
- automatically performing the action steps to correct the problem when an operator is not required to make a decision for correcting the problem; and
- sending the action steps to correct the problem to the operator when the operator is required to make a decision for correcting the problem.
- ~~identifying an operator to receive a notification message; and~~
- ~~formatting and sending the notification message.~~

10. (currently amended) The method of claim 9, further comprising determining if the action steps for correcting the problem are required to be one of (1) performed by a server and (2) performed by the operator wherein identifying the problem comprises:

identifying a problem category; and
consulting an action rules database.

11. (currently amended) The method of claim 9, wherein identifying action steps comprises:

determining if action is required;
identifying the action to correct the problem; and
determining if the action is automatically performed by a management server.

12. (original) The method of claim 11, further comprising, if the action is automatic, initiating the action.

13. (currently amended) A message-based system for managing a storage area network (SAN), comprising:

a management server that monitors states of devices coupled to the SAN and sends alert messages based on the states;~~and~~

a message processor that receives the alert messages and sends notification messages, the message processor comprising:

a receiver that receives the alert messages,
a parser that analyzes the received alert messages,
a formatter/addresser that formats and addresses the notification messages,

and

a transmitter that sends the notification messages to messaging devices;

and

an action rules database that specifies possible corrective actions for correcting a problem associated with the alert, wherein the parser consults the database to select one or more of the corrective actions.

14. (currently amended) The system of claim 13, ~~further comprising an action rules database that specifies possible corrective actions~~, wherein the parser consults the database and uses a state of a device to determine action options.

15. (currently amended) The system of claim 13-14, wherein the possible corrective actions include actions to be initiated automatically by the message processor.

16. (currently amended) The system of claim 13-14, wherein the possible corrective actions include action options requiring approval of a system administrator receiving a notification message, and wherein the notification message includes the action options.

17. (original) The system of claim 13, wherein the formatter/addresser formats the alert messages for receipt by one or more of a Web browser, a mobile phone, and a telephone.

18. (original) The system of claim 13, wherein the management server initiates automatic corrective action based on a monitored state of a device, and wherein a notification message indicates the action taken by the management server.

19. (original) The system of claim 13, wherein the alert messages are e-mail messages.

20. (original) The system of claim 13, further comprising a lightweight directory access protocol (LDAP) database that specifies recipients of the alert messages and transmission modes and addresses.

21. (currently amended) A compute readable medium having instructions for causing a computer to execute a method, comprising: ~~program product comprising a computer-readable medium and computer-readable code embodied on the computer-readable medium, the computer-readable code configured to cause a computer to execute the following steps:~~
comprising:

receiving an alert related to a state of a device coupled to a storage area network (SAN);

 parsing the alert to identify the state of the device, comprising:

 determining a problem category, and

 determining action options, comprising consulting an action rules database;

identifying an action required to correct a problem associated with the alert in response to the identified state of the device; ~~and~~

 identifying a notification message, wherein the notification message provides information related to the state of the device; and.

performing one of (1) automatically performing the action to correct the problem without approval from an operator of the SAN and (2) notifying the operator to perform the action to correct the problem

22. (currently amended) The computer readable medium-~~program-product~~ of claim 21, the steps further comprising identifying an operator of the SAN to receive the notification message.

23. (currently amended) The computer readable medium-~~program-product~~ of claim 21, the steps further comprising sending the notification message to the operator.

24. (currently amended) The computer readable medium-~~program-product~~ of claim 23, the steps further comprising:

 waiting on a response message from the operator, wherein the response message directs performance of one or more action steps; and

 directing execution of the action steps.

25. (currently amended) The computer readable medium-~~program-product~~ of claim 24, wherein the information in the notification message includes one or more suggested action steps for execution.

26. (currently amended) The computer readable medium ~~program product~~ of claim 21, the steps further comprising directing performance of one or more automatic action steps.

27. (currently amended) The computer readable medium ~~program product~~ of claim 21, wherein the information includes a report of automatic action steps completed.

28. (currently amended) A message-based system for managing a storage area network (SAN), comprising:

means for monitoring states of devices coupled to the SAN;

means for sending alert messages based on the states; ~~and~~

means for receiving the alert messages and sending notification messages;

means for identifying actions to correct problems associated with the alert messages;

means for automatically performing the actions to correct the problems when an operator is not required to make a decision for correcting the problems; and

means for sending the actions to correct the problems to the operator when the operator is required to make a decision for correcting the problems. ~~the receiving means comprising:~~

~~means for analyzing the received alert messages, and~~

~~means for formatting and addressing the notification messages, wherein the notification messages are sent to messaging devices.~~

29. (currently amended) The system of claim 28, wherein the means for automatically performing the actions to correct the problems ~~further means for specifying possible corrective actions,~~ wherein the analyzing means consults the specifying means and uses a state of a device to determine action options.

30. (currently amended) The system of claim 29, wherein the means for automatically performing the actions to correct the problems ~~is a management server possible corrective actions include actions to be initiated automatically by the receiving means.~~

31. (currently amended) The system of claim 29, further comprising means to evaluate plural suggestive actions to correct the problems in order to select a corrective action ~~wherein the possible corrective actions include action options requiring approval of a system administrator receiving a notification message, and wherein the notification message includes the action options.~~

32. (currently amended) The system of claim 28, further comprising means for formatting ~~wherein the formatting/addressing means formats~~ the alert messages for receipt by one or more of a Web browser, a mobile phone, and a telephone.